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ABSTRACT

A study explored how reading literacy is related to academic achievement among 14-year-old students in Kenya. The International Evaluation and Educational Assessment Association (IEA) Reading Literacy Test was used for measuring reading literacy, and the Kenya Certificate of Primary Education (KCPE) was used for measuring academic achievement. It was hypothesized that there are degrees of variation in correlation between reading literacy and each subject area a student opts for at KCPE. It was also hypothesized that there is a variation in performance on reading literacy due to influences caused by background factors (literacy interaction) and voluntary reading processes. Reading literacy was assumed to be decomposable into latent variables including: a general reading ability factor, a document reading factor, and specific passage factors. However, such a measurement model was not successful. General reasoning ability proved to be the main factor across most of the subjects at KCPE while verbal ability was connected to the subjects loaded mainly with connected texts to be comprehended. When voluntary reading was explored, a good measurement model was obtained. The measurement model for voluntary reading encompassed seven different types of voluntary reading. Significant relationships between voluntary reading and both reading literacy and academic achievement were observed. An examination of the background factors in the study indicated that they have an impact on students' performance on reading literacy and academic achievement. (Contains a table of data, two figures, and 32 references.) (Author/NKA)

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READING LITERACY IN RELATION TO PATTERNS OF ACADEMIC ACHIEVEMENT

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ABSTRACT

How is reading literacy related to academic achievement among 14 year old students in Kenya? This was the main issue in focus for the present study. The International Evaluation and Educational Assessment Association (IEA) Reading Literacy Test was used for measuring reading literacy and the Kenya Certificate of Primary Education (KCPE) was used for measuring academic achievement. It was hypothesized that there are degrees of variation in correlation between reading literacy and each subject areas a student opts for at KCPE. It was also hypothesized that there is a variation in performance on reading literacy due to influences caused by background factors (literacy interaction) and voluntary reading processes.

Reading literacy was assumed to be decomposable into latent variables including: a general reading ability factor, a document reading factor and specific passage factors. However, such a measurement model was not successful. The selected measurement model constituted only two latent variables: a general reading ability factor which covers most of the items with very few exceptions and a documentary factor which entails those items related to identification, location and association of information in brief documents. There was also a clear evidence that the postulated components of academic achievement, namely: general reasoning and verbal abilities were present in this study. General reasoning ability proved to be the main factor across most of the subjects at KCPE while verbal ability was connected to the subjects loaded mainly with connected texts to be comprehended.

When voluntary reading was explored, a good measurement model was obtained. The measurement model for voluntary reading encompassed seven different types of voluntary reading topical readings from books, magazines and newspapers. Significant relationships between voluntary reading and both reading literacy and academic achievement were observed. An examination of the background factors in the study indicated that they have an impact on students' performance on reading literacy and academic achievement. A strong relationship between reading literacy and academic achievement was noted especially when latent variables were used. This relationship remained even when the background factors were controlled. The measurement model for reading literacy and academic achievement turned out to be the same. However, there were some differences in terms of performance on reading literacy and academic achievement location wise.

Key words: academic achievement, reading literacy, Lisrel, performance, Kenya.

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Introduction

Reading literacy and academic achievement are certainly not naturally evolved practices or skills like walking or talking. Instead, they are acquired in a cultural process of human development. The extent to which an individual learns reading skills for him/her to succeed academically depends on the social demands within his/her community (see Lundberg & Høien, 1991; Olson, 1994).

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While one may think of literacy as a cultural practice that is deeply embedded in a specific cultural context, the conventions of print, the linguistic forms, styles of narration and exposition show remarkable similarities across different cultural settings. In a sense, there is unity among nations as what may be called global literacy but there is diversity as well due to tendencies of variability among countries and cultures based on their individual goals and objectives.

Problem of the study:

1. How do the patterns of relationships and structures among various aspects of reading literacy and academic achievement look like among 14 old students in Kenya?

2. Are there any documentary or general reading ability aspects of reading literacy that stand out as predictors of performance among the subjects at KCPE

3. How can the variance in reading literacy be accounted for by the following factors:

   a. Home and school conditions
   b. Reading opportunities
   c. Socio-economic status
   d. Student's voluntary reading

Hypotheses:

1. There is a structural relationship between verbal ability, verbal ability and each subject at KCPE

2. There is gender difference in performance of reading literacy and academic achievement. Based on earlier studies, it is expected that girls outperform boys on a reading literacy test

3 There is a difference in performance for boys and girls based on the location of the school - rural or urban

Importance of the Study

The age group of the 14 year old students is of a major significance in the Kenyan system of education because these are the students who form the foundation of secondary education. Thus, the interest that led to considering this group for the present study, in the sense that the group forms a stratum of future leaders, policy developers, educators, doctors, and other professionals etc. once they successfully complete their education. The cohort is 27 percent of the national enrollment who are successful to reach

the secondary school level of education. It is also the age when a big transition occurs in the Kenyan educational system. An individual is expected to join the next step in the academic ladder, the ninth grade/some professional training/or to be self-reliant. Consequently, academic achievement at this level plays a vital role in determining a student's personal life and his/her participation in the building of the nation.

The present study seeks to identify the level of impact of such underlying components as general reading ability and documentary aspects that are crucially embedded in reading literacy, and how these components individually or collectively relate to each subject at the KCPE. Hence, what care should be taken by parents, teachers, and students to cater for home and school conditions, students' voluntary reading, and reading opportunities factors that could latently affect a student's academic achievement.

The Conceptual Framework of the Study

A basic assumption in this study was that reading literacy and academic achievement are inter-related. The relationship is perceived as a relevant phenomenon in understanding the learning process of a student and how that process may lead to a desirable end product. Despite a student's wish to have optimal performance in his/her reading literacy or academic achievement, certain background factors are not necessarily within his/her control. These may be such factors as home and school conditions, socio-economic status, and reading opportunities, that determine the home literacy interaction before a student begins formal schooling. Further, it is possible that success in academic achievement is at stake only when a student has a poor general reading ability. Alternatively, performance in each subject, (English, Kiswahili, Geography, Music, Home Science, Science, and Mathematics), may require different abilities such as verbal or general reasoning ability, but with a general reading ability as a fundamental prerequisite to academic achievement? The following figure presents the conceptual framework as discussed above. (see Figure 1).

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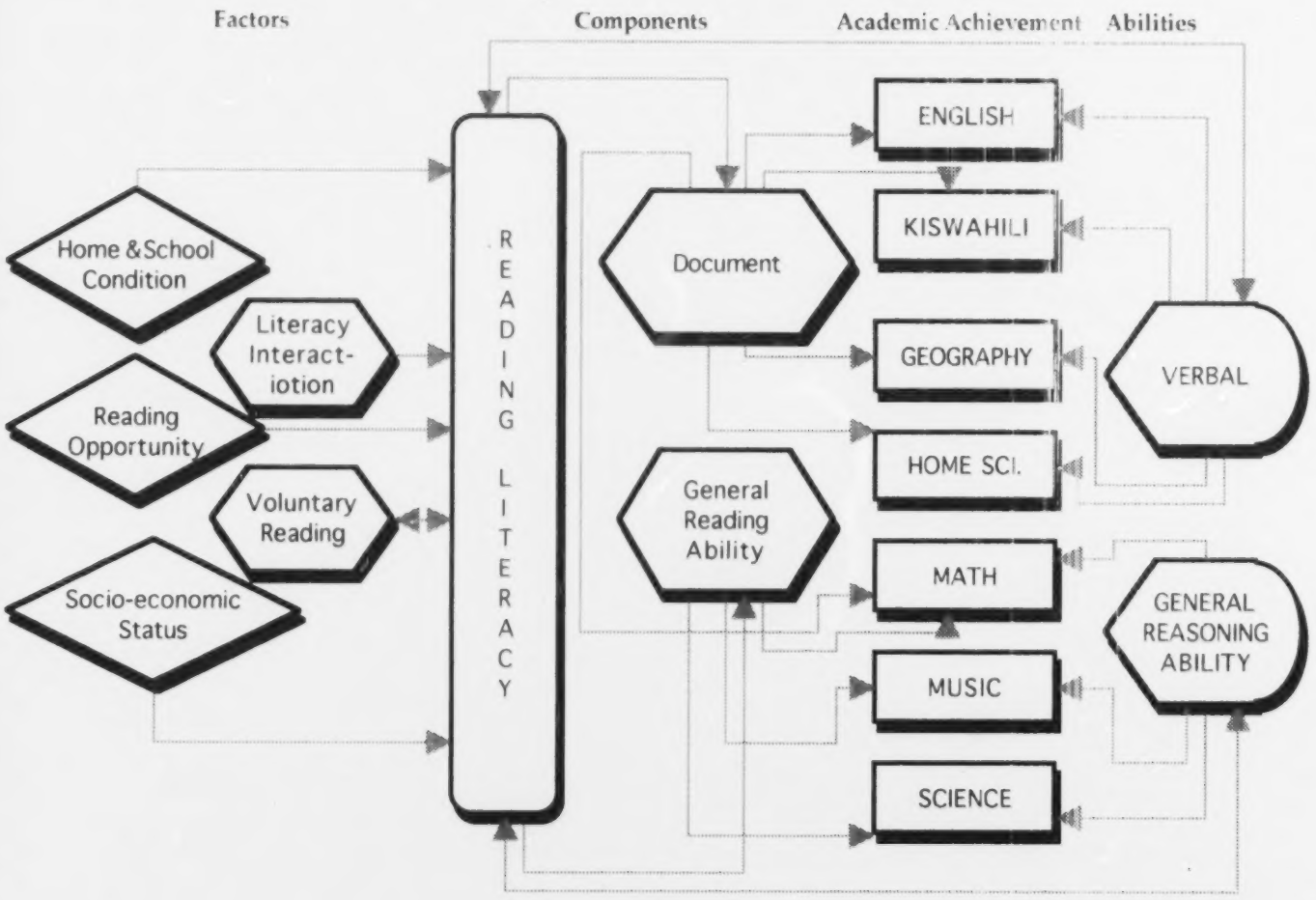

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METHODOLOGY

Target Population:

All the ninth grade students (27% of all in the age group) in the Kenyan secondary schools (256,163).

Sample:

Judgmental sample of 14 year old students (1,098) in secondary schools from 4 out of 8 provincial regions in Kenya.

About 275 students from each region involving 12 schools from both urban and rural areas.

Procedure:

Administration of parts of the reading test and student questionnaire from the IEA Reading Literacy study at one occasion.

Collection of Kenya Certificate of Primary Education (KCPE) results for each participating student.

Interviews with 6 students

Instruments:

Parts of the IEA Reading Literacy Test

Domain	Passage	No. of quest.	Format
Document	Card	7	open ended
Document	Reso	3	open ended
Document	Job	3	mult.choice
Document	Bus	3	open ended
Document	Dire	3	open ended
Document	Glob	4	open ended
Document	Vita	3	mult.choice
1	7	26	
Expository	Marm	4	mult.choice
Expository	Lase	6	mult.choice
Expository	Woma	4	mult.choice
Expository	Para	6	mult.choice
Expository	Smok	6	mult.choice
1	5	26	
Total 2	12	52	

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Expository Prose: Continuous texts designed to describe, explain, or otherwise convey factual information or opinion to the reader

Document: structured information displays presented in the form of charts, tables, maps, graphs, lists or set of instructions. These materials were organized in such a way that students had to search, locate, and process selected facts rather than read every word of continuous texts.
(From Elley, W. B. (1992) How in the world do students read?)

Data Analyses

The data was analyzed by the use of descriptive statistics, factor analysis, and LISREL

Results from the Analyses of Data

1. There was no overall difference in performance on reading literacy among boys and girls but some differences at the passage levels were noted.

2. The reading literacy models for boys and girls separately were similar

Table 1. A summary of LISREL values for reading literacy and academic achievement.

	Chi-square	Degrees of freedom	RMSEA	GFI	AGFI
RL	240	169	0.020	0.98	0.97
AA	19	11	0.027	0.99	0.98

The Lisrel values in Table 1 indicate that both the measurement models for reading literacy and academic achievement fit the data for study. Thus, the conceptual framework model was found to be workable with data for the study. (for details see Agak, 1995).

Summary and Conclusions:

Conclusions in the present study could only be meaningful if they were seen in the light of the theoretical model for the study in Figure 1.

I) To the left of the model, it appears, according to the findings, that the background factors indeed have some degree of influence on both reading literacy and academic achievement.

II) There is variation in performance on reading literacy and academic achievement that appear to be related to home and school conditions, reading opportunities, voluntary reading, and social status level from which a student comes, and other influences like TV watching, etc. More so, about 4 percent of such influences contribute to the relationship between reading literacy and academic achievement.

III) Considering the middle part of the theoretical model, reading literacy, as measured by the IEA reading literacy test, is divisible into two deeper aspects, namely: general reading ability and documentary domains which are important in understanding reading literacy.

IV) A look at academic achievement, as was measured by subjects at KCPE, to the right of the theoretical model, indicates that it is composed of a factor that seems to cut across most of the subjects at KCPE, general reasoning ability, and another factor, verbal ability, that relates to reading literacy at a much higher level than general reasoning ability.

V) Viewing the model as a whole, the correlation between the constructs of reading literacy and academic achievement indicates that there exists a substantial relationship.

VI) Responses on the interview in this study seemed to show that there are underlying fundamental attributes that reading literacy adds to an individual such as compliance, functionality, social image, and self confidence which contribute to a student's desire of being literate in Kenya.

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